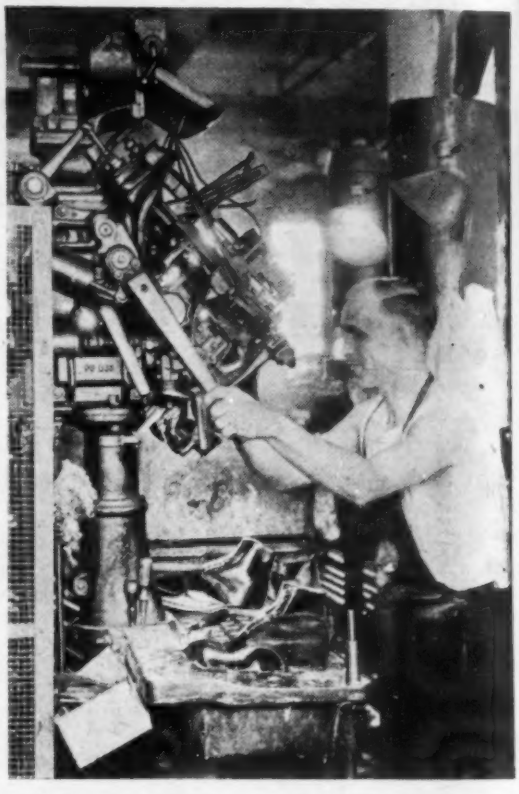
VOLUME 2, NUMBER 10 THIS ISSUE: THE MAKING OF CLOTHES APRIL 9, 193

HIDES, LEATHER AND SHOES

THE story of leather starts with the animals whose pelts we use to make shoes, pocketbooks, luggage, brief-cases and the hundred and one other leather articles in everyday use. Here we are concerned only with shoes, because this issue of Junior Scholastic has to do with the things we wear. The pelts of animals are man's oldest kind of clothing. Open your Bible and read in Genesis III, 21: "Unto Adam also and to his wife did the Lord God make coats of skins and clothed them." This was after Adam and Eve had covered their sheer nakedness by sewing fig leaves together to make aprons. (Genesis III, 7).

Ohio Leather Co.



The bible does not explain by what means Adam and Eve prepared the skins so that they would remain pliable, soft and odorless. But we do know, from other records, that the preparation of animal skins for use as clothing was known to people centuries ago. No doubt the making of leather was one of the first things primitive man did when he learned how to use his hands for skilled work.

Picture above

The hides for shoe leather in a modern tannery go through about 30 processes before the leather is ready to deliver to the shoe factory. In the picture above we see two of the early operations. The men at the left are rubbing the skins with a blunt knife, over a rounded beam. This removes whatever hair and dirt remained after the skins came out of the fleshing and unhairing machines. The men standing near the tables are placing the skins in the "pickle paddles," where chemicals reduce the swelling caused by previous operations.

Picture at left

Here we see a pile of bark from oak trees, which is ground and made into a liquid used in the tanning of leather. Hemlock is also used.

Ewing Galloway

Picture at right and one above it

The picture at the right shows the skin pretty well along toward becoming leather fit for a shoe. The skins have already been tanned, dyed and seasoned to make a high-grade quality of leather for shoe uppers. Here we see the skins being glazed. The long row of machines are called glazing jacks, each one attended by a workman. Each machine has a long arm on the end of which is a solid glass cylinder. This cylinder rubs the leather, and gives it a high polish.

In the picture above the glazing jacks, we see one of the many machines in a shoe factory. This particular machine is called a pull-over, and is a most remarkable invention. It has pincers which grip the upper and pull it into proper shape over the last. The operator must be a very skilled workman.

Some of the material for this page is from "The Story of Leather," and is used by permission of The Ohio Leather Co., Girard, O.

FROM TOE TO TIP

Animals and Plants For Our Clothing

WE'VE talked about food and shelter in recent issues of Junior Scholastic. Last week we looked over the Kingdom of Cotton, and examined the fluffy white flower from which we make most of our clothing.

This week we are going to see how clothing is manufactured, not only from raw cotton, but from other raw materials such as sheep's wool, worm's silk, cow's hide and other animals and plants.

We know you will find it interesting to look at the pictures in this issue and read the descriptions of how clothing is made by men and machines.

But we hope you bear in mind the one all-important point that we have hammered home time and again during the past few months: that the things we wear, just like the things we eat and build our houses of, come from the Good Earth. Or, to be less poetic, let us just call it THE LAND.

The land is our most precious possession, from which all things flow.

Look Yourself Over

Now let's get dressed. You probably are thinking more about clothes and how you look than you used to several years ago. At the ages of 11, 12, 13, 14 and 15 boys and girls begin paying more attention to their appearance. In the next issue of Junior Scholastic we will have something to say about buying clothes and how to dress neatly and "wear your colors" well.

For the present let's look at the clothes we put on this morning when we got up. Look yourself over from tip to toe, and see what's covering you. Or, rather, let's look from toe to tip, because it is more convenient for us to write about your shoes first.

Most shoes are made of leather, tanned from the skins of animals. Steers, cows, horses, camels and walrus are used to make the soles of shoes. Calves, sheep, goats and kangaroos contribute their skins to the uppers (that part of the shoe above the sole).

You can't tell by looking at your shoes what animals they are descended from. Animal hides go through so many processes before they are made into shoes that even experts have a hard time telling one skin from another on the finished shoe.

Leather for your shoes may come from a steer that roamed the plains of North Dakota. Or it may come from a South American steer, an African goat or an Australian kangaroo. We use so much leather in the United States that our own cattle, sheep and other animals cannot supply enough skins. So we buy skins from South America, and also some from Africa, Australia and Europe.

Before animal skins can be used to make shoes, they have to be carefully prepared. If we used skins just as they come from the animals, the skins would rot. If we did nothing but dry the skins, they would become hard and coarse, and unfit for use.

The work of changing animal skins into leather is called tanning, and is done in leather factories called tanneries. First step in tanning is to remove the hard, rough outer skin from the raw hides which are sent to the tanneries by slaughter houses. Then the outer skin is soaked in liquid solutions made of the bark of trees, or various chemicals.

Tanning takes about five months to finish, from the time the animal hide reaches the tannery until it is ready to be shipped to the shoemaking factory. Leather goes through about 30 different processes before it is finished. Some of these processes are called soaking, unhairing, shaving, drying, seasoning and graining.

Our largest tanneries are in New York, Pennsylvania, Massachusetts, Maine, Ohio and Illinois.

Once the leather is tanned, it is ready to be sent to the shoe factory. Here leather goes through 170 operations before it is a finished shoe, boxed and ready to be sold.

Many years ago, it used to take a cobbler eighteen hours to make one pair of shoes. Today a worker in a shoe factory operates one machine that does only one particular job in making a shoe. Other workers operate other machines. Shoes are put together in large quantities, just as automobiles are. Each year American shoe factories make about 360,000,000 pairs of shoes.

The shoemaking industry may be found in different sections of our country. The largest factories are in New England, Pennsylvania, Ohio and Missouri.

Next come our stockings and underclothing. Most boys wear cotton socks or stockings and underclothing. Girls do too, but many also have silk or rayon stockings and underclothing.

Ewing Galloway

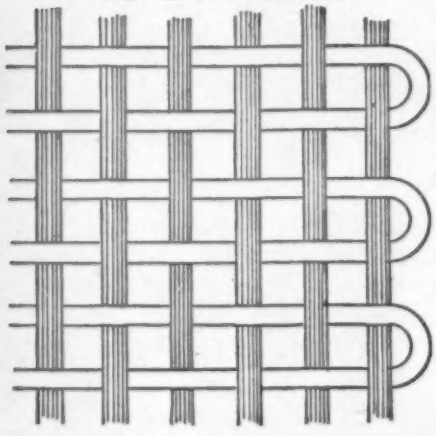
When the cotton is unbaled at the cotton mill, the first machine into which it goes is called the breaker. This machine loosens the cotton, makes it fluffy again.

JUNIOR SCHOLASTIC, a weekly for the Upper Elementary Grades and Junior High Schools. Published every week during the school year—Sept. through May inclusive, except during school holidays, by Scholastic Corporation; M. R. Robinson, Editor. Entered as second-class matter Sept. 1, 1937, at the post office at Pittsburgh, Pa., under the Act of March 3, 1879. Contents copyright 1938 by Scholastic Corporation. Subscription price: For two or more copies to one address, 80c a year (32 issues); 40c a semester each (16 issues); single subscriptions, $1.25 a year. Address subscriptions to Junior Scholastic, Chamber of Commerce Bldg., Pittsburgh Pa., editorial correspondence to 250 E. 43rd St., New York, N. Y.

Let's take cotton first, because almost everything we wear has some cotton in it. As we saw last week, King Cotton is the most widely manufactured textile (cloth) in the world.

To see how cotton is manufactured into cloth, let's follow a bale as it enters the cotton mill.

WOVEN THREADS



The above drawing shows the structure of woven fabric. The dark threads are the lengthwise (warp); the crosswise, or filling, threads are the woof.

First the ball is opened, and the cotton is loosened and made fluffy again by machines called the *bale breaker* and the *opener*. Then other machines clean the cotton of all seeds and dirt. Now the cotton is ready to be carded. In carding, the cotton passes through large rollers. These are covered with wire teeth which brush, comb and straighten the fibers as they go through, much in the same way that we comb our own hair. The cotton comes out of the carding machine in a thin gauze-like layer and is mechanically gathered in a sliver and wound in a big ball called a card ball. (See pictures on page 7, where wool is shown being carded.) The sliver goes through several different machines, which draw it thinner and thinner, until thin enough to be spun into thread.

Colonial women who used spinning wheels and hand looms would be amazed to see how much work modern spinning machines and power looms can do in a short time. Each machine can spin thousands of yards of cotton yarn each day. Spinning draws out the yarn and twists it, so that it will be strong enough for weaving.

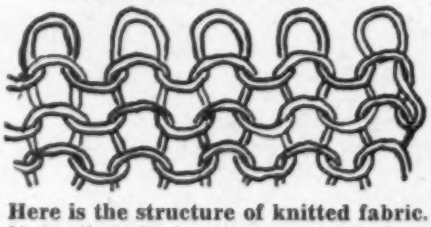
Have you ever examined a piece of cloth and noticed how the threads are put together? Almost all materials are either woven or knitted. Woven material is made by having two sets of threads cross each other at right angles. The threads that run the length of the material are called the warp. The threads which go the other way are the woof. Material that is knitted is made of one long thread. Each line of stitches is looped into the one before it. (See drawings.)

Cotton cloth used to be a luxury only wealthy people could afford. Then it was made by hand. But now that we have power machines to do the work of spinning, weaving and knitting, cotton is cheap.

Stockings and undergarments are generally knitted. Most knitting factories in the United States are found in the Middle Atlantic states. Factories where woven cotton cloth is made are located in New England and in the South. New England used to lead in production, but in recent years the South has taken the lead. Cheaper labor in the South has induced many of the mill owners to leave New England.

And now, what about silk?

KNITTED THREADS



Here is the structure of knitted fabric. Note that it is all one continuous looping thread. No warp and no woof!

Silk is the most expensive material of all, and it is made in a most interesting way. A velvety white caterpillar, about three inches long, is the spinner of the thread we call silk. This caterpillar is better known as the silkworm.

Raising silkworms and making silk cloth began in China thousands of years ago. For many hundreds of years, the Chinese people did not let anyone know the secret of how they made silk. But finally the knowledge leaked out. According to one story, two European monks visited China and smuggled some silkworm eggs to Europe, hiding them in bamboo walking sticks.

Now silk worms are raised in Japan, China, Italy and France, with Japan producing the most. Here in America, people tried several times to start raising silkworms. But they soon found that it was cheaper to buy silk from other countries where labor is so cheap, than to raise it here. Today 85% of the silk we use in America comes from Japan.

The cultivation of silkworms is an important industry in Japan. First the silkworm moth lays eggs. These are so small that about 40,000 of them weigh no more than one ounce. These eggs are put on small cards, and are kept in a cool place as long as desired. Then when the time comes to hatch them, they are brought into a warm room. In about twenty days, the eggs hatch into tiny caterpillars about as large as a pinhead.

The silkworms, fed on mulberry leaves, grow for about a month until they are about three inches long. Then they stop eating, and crawl up on a little framework of straw provided for them so that they can make their cocoons. Each worm has two tiny openings near its mouth. From these openings the worm emits fine silk threads which combine into one. The worm spins this silk thread all around itself by moving its body back and forth. In two or three days the cocoon is completely finished. (See pictures on page 9.)

Unwinding the Cocoon

After the cocoon is finished, the silkworm goes to sleep. If it is left alone for about twenty days, it will make a hole in the cocoon and come out as a moth. Only a few are allowed to do this, because if the moth comes out, the silk is broken and can't be unwound in a whole filament (thread). So, in order to kill the developing moth inside the cocoon, the cocoons are heated in huge ovens. Of course, enough moths are allowed to hatch to provide eggs for the batch of worms. The moths emerging from the cocoons mate, the male moth dying at once, and the female laying from 300 to 500 eggs.

Thus, you see the life circle of the silkworm—from egg to worm into cocoon to moth and back to egg again.

When the cocoons are finished and the worms inside have been killed, the cocoons are stored away. They are kept until the factory is ready to handle them. Cocoon silk is covered with a gummy substance. Before the silk can be unwound, this gum must be softened by soaking the cocoons in warm water. Now the cocoons are ready to be unwound.

Japanese girls who unwind the cocoons pick up the threads of five or six cocoons, and wind them into single threads. These girls have to be very skillful to keep the threads even as they wind them on reels. This work is all done by hand, because so far no machine has been invented that can do this work as well as these girls can. These girls are paid about ½ Yen a day (about 15c in American money), besides their room and

Turn next page

The two drawings on this page are from a book which you should read if you want to continue your study of clothing materials. The name of the book is *Textiles and Clothing*, by Ellen B. McGowan and Charlotte A. Waite. Published by The Macmillan Company.

FROM WORMS

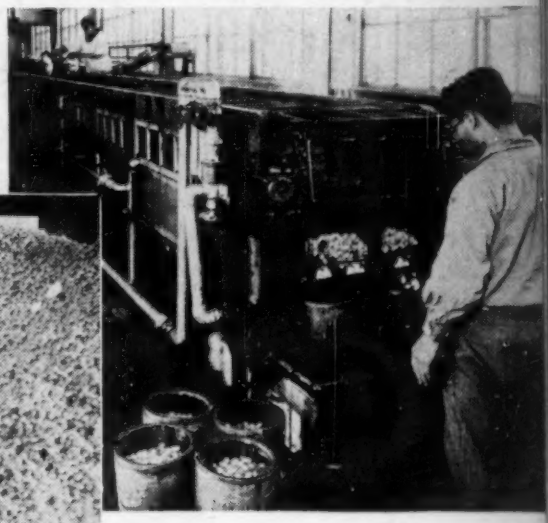
1 Silkworms need only one thing to eat—mulberry leaves. So the raising of mulberry trees is also an important part of Japanese farm production. Picture above shows silkworms, which are kept on trays, being given fresh mulberry leaves on which to feed. Worms feed four weeks before starting their cocoons.

2 Here is Mr. Silkworm (or Mrs. Silkworm, we aren't sure), feasting on a mulberry leaf. Both males and females spin cocoons, the female cocoon being the heavier. In about a month the worms are through eating, and are removed from the trays and placed on small straw racks, where they spin their cocoons.

NEARLY all the silk used in the United States is spun by silkworms in Japan. Silk production is Japan's leading industry. Half the farms in Japan (2 million farms) raise the worms that spin the cocoons from which the delicate strands of silk are unreeled. The pictures on this page tell the story of this big Japanese business in worms.

3 Above we see girls lifting the finished cocoons off the racks. It took several days for the worm to spin its cocoon around itself.

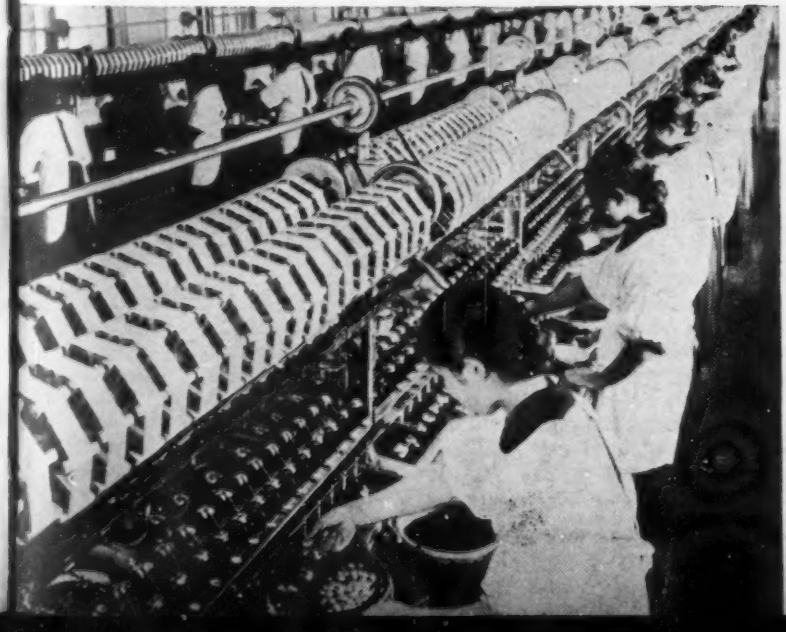
4 The cocoons (each with its shrunken worm lying dormant inside) are placed in ovens, the heat from which kills the worms.



5 To soften the gummy coating on the fibres of raw silk, the cocoons are soaked in baths of hot and cold water.

6 Skilled girls remove the long strand of silk from each cocoon, and wind it on a reel. The quality of strand depends on the girl's skill.

7 Removed from the reels, the silk is re-reeled into skeins. Workmen pack the skeins into "books" of 30 skeins each, for packing and shipment to foreign countries.



board. Because the girls are paid such low wages, the Japanese can sell silk to the United States at low prices.

After the threads of several cocoons are reeled together, they are re-reeled with more threads. They are twisted together to form a skein (loop) of silk. The skeins are gathered into "books" of 30 skeins each and are wrapped for shipment. Most of the silk we buy from Japan comes in the form of skeins of raw silk. Here in our silk manufacturing mills, the raw silk is washed, and then made into thread and cloth. Most of our silk mills are in New Jersey. Paterson, N. J., is the biggest silk manufacturing city in the world.

Now that we've finished shoes, stockings and underwear, let's skip on to coats. Coats are made of wool, because it is the lightest and warmest cloth we know.

Wool is made from the hairy covering of various kinds of sheep. We also get some wool from goats, camels and alpacas, but sheep are our most important source of supply. Different breeds of sheep yield different types of wool. Some breeds have wool with short fibres. Others have long fibres.

Long and medium wool is used for making coarse cloth. But short wool is used most for making the fine cloth we use for clothing.

Australia Leads

Australia produces more wool than any other country, Argentina comes second, and the United States third. Russia, South Africa, England, Spain and Germany produce a great deal also. Here in the United States, we produce about two-thirds of the wool we use for clothing.

In the United States, most sheep are raised in Wyoming, Montana, New Mexico, Idaho, Oregon and California. The quality and value of the wool are affected by climate, food and health of the sheep. If sheep are exposed to bad weather or do not have proper food, their wool will be poor in quality.

Sheep are usually sheared late in the spring, when they still have on their heavy winter "overcoats." The removed wool is called a fleece. Shearers used to use hand shears, like scissors, but now they use machine clippers, which get closer to the skin. A good shearer can shear nearly 200 sheep a day.

When all the sheep of a flock are sheared, the fleeces are rolled up and tied and sent to the factory. Here the wool has to be sorted. Each fleece has different kinds of fiber, some longer and some finer than others. The best wool comes from the neck, sides and shoulders of the sheep, and the poorest from the legs. The sorter tears out handfuls of wool and throws the various grades into separate bins. Sorting wool is not a pleasant job, because the wool is always greasy and dirty and filled with burs and thistles.

After the wool is sorted, it has to be "opened" to disentangle the fibers, and washed by special machines. After this is finished, the wool is clean, white and fluffy. Now it is oiled with a special oil, and is ready to be blended. Blending is an important step in the manufacture of woolen cloth. The various grades of wool are weighed and laid on the floor. Sometimes cotton is added. Expert blenders have special recipes of their own for blending wool. They follow their recipes as carefully as mother does when she bakes a pie. The blender uses certain percentages of different kinds of wool until he has exactly the mixture he wants. He can make a coarse blend of wool or a fine blend, or any number of in-between blends.

Nesmith

Here is a battery of machines knitting woolen yarn into jersey cloth. The cones of yarn can be seen on the floor. The finished cloth is slowly wound on the big roll at the top of each machine.

Now the finished blend goes through almost exactly the same processes as cotton. It goes through carding machines and spinning machines. (See pictures on page 5.) Then it is woven or knitted into cloth. Before the wool is ready to be packed up and sold, it has to be soaked in water, so that the fibers will thicken and draw together. This process is called fulling. It is done to make the cloth strong and firm. Like cotton, wool may be dyed either before or after it is made into cloth.

In the United States we weave about 500,000,000 square yards of wool each year. Our largest factories are in Pennsylvania, Massachusetts, Rhode Island, Cleveland (Ohio) and New York.

The finished cloth is sent to garment-making factories. Here patterns are made for all the various sizes and types of coats (and other garments) that people wear. Then the cloth is cut according to the patterns, and sewed together. The finished coats are ironed, then packed and sent to stores to be sold. Most ready-to-wear clothes are made in New York City, but there are also clothing factories in other cities.

Are you wearing anything made of linen? Perhaps not, because linen is not used for clothing nearly as much as it used to be, especially before the days of cheap cotton. Now we use linen mainly for summer clothes, fine handkerchiefs, hand-towels and tablecloths.

The Flax Plant

Linen is made from the stem of the flax plant, and is produced chiefly in European countries. Russia is the largest flax grower in the world. Here in the United States we grow some in Michigan, Minnesota and Oregon.

Growing flax and preparing it to sell to linen mills is a hard job. Not only must the cultivation of the growing plant be carefully attended to, but also the plant can easily be spoiled after it is picked.

When the flax is ripe it is pulled by hand. The stalks are allowed to dry, and then the seeds and leaves are removed by machine. The inner fibers of the flax stem are used for the making of linen. In order to get at these fibers, the outer stalk has to rot away, either by keeping it in water or placing it in chemicals for a certain period of time. If it is kept in too long, the fibers become brittle and weak.

The process of rotting away the outer stalk is called *retting*. After retting, the flax goes through various cleaning processes, called *breaking*, *scutching* and *hackling*. After the flax is thoroughly clean, it is sorted and ready to be carded and spun. The spinning and weaving of linen has to be done in a very moist room.

Cloth From Wood

Here we have seen that the clothing we wear is made from both animal and vegetable products. For many years these animal and vegetable products were the only ones we knew how to use for clothing. But now science has made it possible for us to make cloth by using new combinations of things. Most important of these new products is rayon.

There are four main types of rayon now being made. They are: viscose, cuprammonium, cellulose-acetate and nitro-cellulose. These names describe the materials used in making rayon. Rayon is made by combining cellulose (wood pulp or short cotton fibers) with various chemicals. Different types of rayon are made by using different chemicals.

When rayon was first perfected, a scientist said, "At last man has risen to the level of the worm, and can spin threads to suit himself." At first people thought these man-made threads were only a poor imitation of worm-made silk, and not much of it was sold. Now we manufacture and use more rayon than silk.

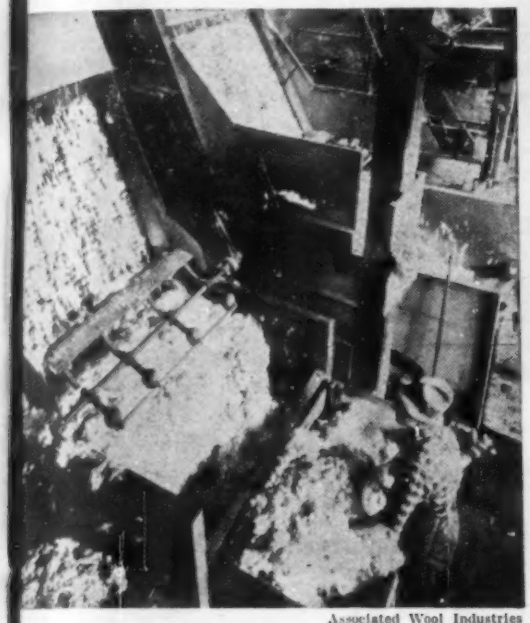
FROM SHEEP

MOST of the sheep from which we get our wool are raised in the Rocky Mountain states, Pacific Coast states and Texas. The sheep is an ancient animal, as those who read the Bible well know. But the sheep is not native to America. The first sheep were brought here from England in 1609, and landed in Jamestown, Va.

¶ The pictures on this page show stages in the manufacture of cloth from sheep's wool, starting with the clipping of the sheep (at right) and carrying the wool fibres though to the final operation where, in the shape of yarn, they are woven into cloth on electric looms.

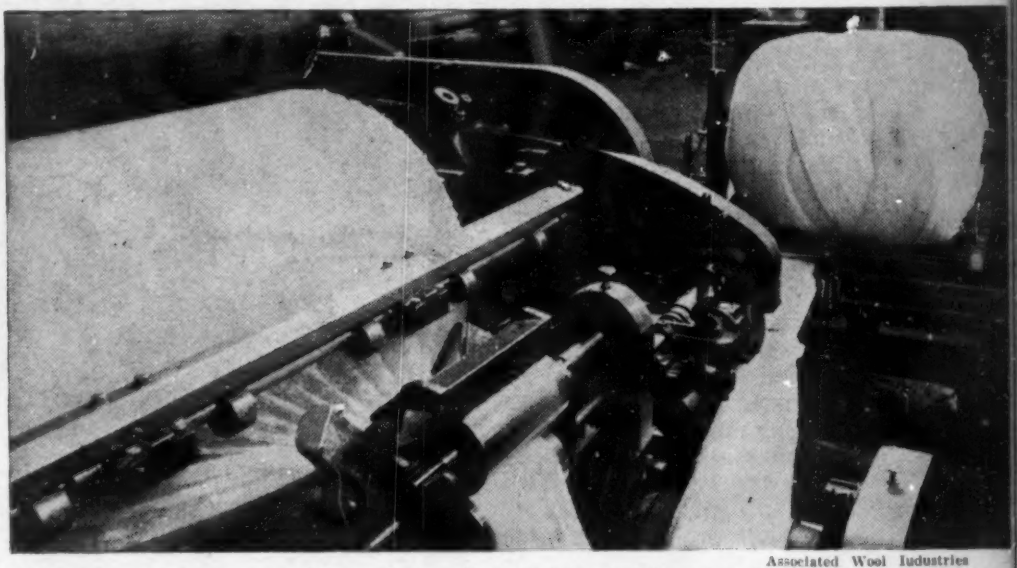
U. S. Dep't of Agriculture

1 Springtime is wool clipping time. In warm climates, sheep can be clipped twice a year. Here we see a farm boy shearing a sheep with clippers powered by the machine which the girl turns.



Associated Wool Industries

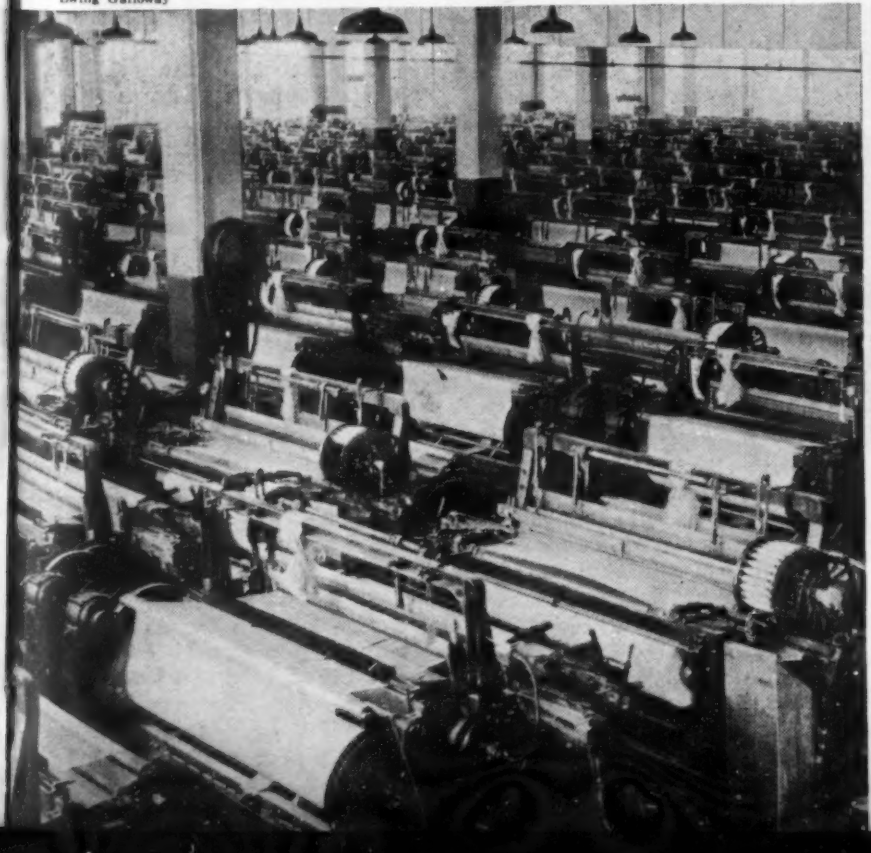
2 Wool clipped from live sheep is called grease wool. Wool from slaughtered sheep is called pulled wood. After the wool is scoured and dried, it is "opened" in this machine, which disentangles the matted mass of fibres, and starts the process called "carding," in which the fibres are combed and spread in a thin film or sheet.

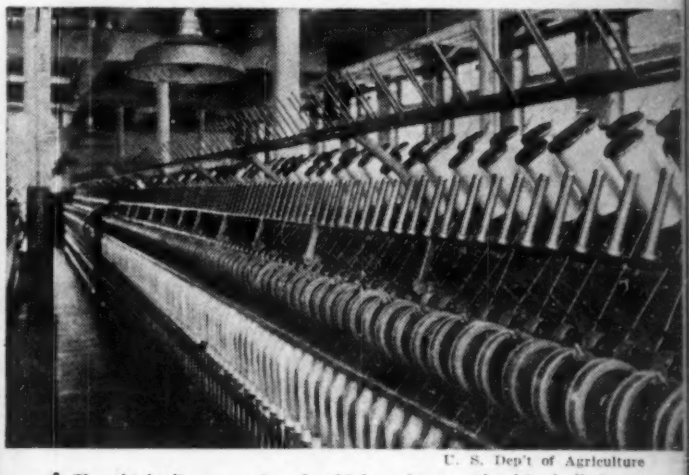


Associated Wool Industries

3 Here the wool is coming out of the carding machine, which has straightened the fibres and spread them out in a web form, which is condensed through rollers and gathered in a big ball.

Ewing Galloway





U. S. Dep't of Agriculture

4 The thick sliver, or strand, which makes up the big ball, is put through several other machines to make the fibres still straighter and comb out the short ones. The sliver is then thin enough to be spun into yarn. Picture above shows a spinning frame. The sliver is whirled and twisted into yarn by revolving spindles and wound on bobbins.

5 The final operation in the making of cloth is weaving, which is done on looms, a room full of which we see on the left. The loom pulls the lengthwise threads (warp) off the rollers, and by means of a shuttle, carries the filling thread (woof or weft), weaving it up and under the lengthwise threads. The filling threads are pulled off bobbins, which can be seen in frames to the right of each loom.

THE MOLE & THE RAT

The Mole, Who Had Never Seen a River Before, Goes Rowing

THE Mole had been working very hard all the morning, spring-cleaning his little home. First with brooms, then with dusters; then on ladders and steps and chairs, with a brush and a pail of whitewash; till he had dust in his throat and eyes, and splashes of whitewash all over his black fur, and an aching back and weary arms. Spring was moving in the air above and in the earth below and around him, penetrating even his dark and lowly little house with its spirit of divine discontent and longing. It was small wonder, then, that he suddenly flung down his brush on the floor, said "Bother!" and "O blow!" and also "Hang spring-cleaning!" and bolted out of the house without even waiting to put on his coat. Something up above was calling him imperiously, and he made for the steep little tunnel which answered in his case to the gravelled carriage-drive owned by animals whose residences are nearer to the sun and air. So he scraped, and scratched and scrabbled and scrooged and then he scrooged again and scrabbled and scratched and scraped, working busily with his little paws and muttering to himself, "Up we go! Up we go!" till at last, pop! his snout came out into the sunlight, and he found himself rolling in the warm grass of a great meadow.

"This is fine!" he said to himself. "This is better than whitewashing!" The sunshine struck hot on his fur, soft breezes caressed his heated brow, and after the seclusion of the cellarage he had lived in so long the carol of happy birds fell on his dulled hearing almost like a shout. Jumping off all his four legs at once, in the joy of living and the delight of spring without its cleaning, he pursued his way across the meadow.

It all seemed too good to be true. Hither and thither through the meadows he rambled busily, along the hedgerows, across the copses, finding everywhere birds building, flowers budding, leaves thrusting—everything happy, and progressive, and occupied. And instead of having an uneasy conscience pricking him and whispering "whitewash!" he somehow could only feel how jolly it was to be the only idle dog among all these busy citizens. After all, the best part of a holiday is perhaps not so much to be resting yourself, as to see all the other fellows busy working.

He thought his happiness was complete when, as he meandered aimlessly along, suddenly he stood by the edge of a full-fed river. Never in his life had he seen a river before—this sleek, sinuous, full-bodied animal, chasing and chuckling, gripping things with a gurgle and leaving them with a laugh, to fling itself free on fresh playmates that shook themselves free, and were caught and held again. All was a-shake and a-shiver—glints and gleams and sparkles, rustle and swirl, chatter and bubble. The Mole was bewitched, entranced, fascinated. By the side of the river he trotted as one trots, when very small, by the side of a man who holds one spell-bound by exciting stories; and when tired at last, he sat on the bank, while the river still chattered on to him, a babbling procession of the best stories in the world, sent from the heart of the earth to be told at last to the insatiable sea.

As he sat on the grass and looked across the river, a dark hole in the bank opposite, just above the water's edge, caught his eye, and dreamily he fell to considering what a nice snug dwelling-place it would make for an animal, above flood level and remote from noise and dust. As he gazed, something bright and small seemed to twinkle down in the heart of it, vanished, then twinkled once more like a tiny star. But it could hardly be a star in such an unlikely situation; and it was too glittering and small for a glow-worm. Then, as he looked, it winked at him, and so declared itself to be an eye; and a small face began gradually to grow up round it, like a frame round a picture.

A brown little face, with whiskers.

A grave round face, with the same twinkle in its eye that had first attracted his notice.

Small neat ears and thick silky hair.

It was the Water Rat!

Then the two animals stood and regarded each other cautiously.

"Hullo, Mole!" said the Water Rat.

"Hullo, Rat!" said the Mole.

"Would you like to come over?" inquired the Rat presently.

"Oh, it's all very well to *talk*," said the Mole, rather pettishly, he being new to a river and riverside life and its ways.

The Rat said nothing, but stooped and unfastened a rope and hauled on it; then lightly stepped into a little boat which the Mole had not observed. It was painted blue outside and white within, and was just the size for two animals; and the Mole's whole heart went out to it at once, even though he did not yet fully understand its uses.

The Rat sculled smartly across and made fast. Then he held up his forepaw as the Mole stepped gingerly down. "Lean on that!" he said. "Now then, step lively!" and the Mole to his surprise and rapture found himself actually seated in the stern of a real boat.

"This has been a wonderful day!" said he, as the Rat shoved off and took to the sculls again. "Do you know, I've never been in a boat before in all my life."

Illustrations by Kate Tracy

"You know, I've never been in a boat before"

This story is from *The Wind in the Willows*, by Kenneth Grahame, and is used here by permission of Charles Scribner's Sons, publishers.

"What?" cried the Rat, open-mouthed: "Never been in a—you never—well I—what have you been doing, then?"

"Is it so nice as all that?" asked the Mole shyly, though he was quite prepared to believe it as he leant back in his seat and surveyed the cushions, the oars, and the rowlocks, and all the fascinating fittings, and felt the boat sway lightly under him.

"Nice? It's the *only* thing," said the Water Rat solemnly, as he leant forward for his stroke. "Believe me, my young friend, there is *nothing*—absolute nothing — half so much worth doing as simply messing about in boats. Simply messing," he went on dreamily: "messing—about—in—boats; messing—"

"Look ahead, Rat!" cried the Mole suddenly.

It was too late. The boat struck the bank full tilt. The dreamer, the joyous oarsman, lay on his back at the bottom of the boat, his heels in the air.

"—about in boats—or *with* boats," the Rat went on composedly, picking himself up with a pleasant laugh. "In or out of 'em, it doesn't matter. Nothing seems really to matter, that's the charm of it. Whether you get away or whether you don't; whether you arrive at your destination or whether you reach somewhere else, or whether you never get anywhere at all, you're always busy, and you never do anything in particular; and when you've done it there's always something else to do, and you can do it if you like, but you'd much better not. Look here! If you've really nothing else on hand this morning, supposing we drop down the river together, and have a long day of it?"

The Mole waggled his toes from sheer happiness, spread his chest with a sigh of full contentment, and leaned back blissfully into the soft cushions. "*What* a day I'm having," he said. "Let us start at once!"

"Hold hard a minute, then!" said the Rat. He looped the painter through a ring in his landing-stage, climbed up into his hole above, and after a short interval reappeared staggering under a fat, wicker luncheon-basket.

"Shove that under your feet," he observed to the Mole, as he passed it down into the boat. Then he untied the painter and took the sculls again.

"What's inside it?" asked the Mole, wriggling with curiosity.

"There's cold chicken inside it," replied the Rat briefly; "coldtonguecoldhamcoldbeefpickledgherkinssaladfrenchrollscressandwichespotted meatgingerbeerlemonadesodawater cookiesandtaffy——"

"O stop, stop," cried the Mole in ecstacies: "This is too much!"

"Do you really think so?" enquired the Rat seriously. "It's only what I always take on these little excursions; and the other animals are always telling me that I'm a mean beast and cut it *very* fine!"

The Mole never heard a word he was saying. Absorbed in the new life he was entering upon, intoxicated with the sparkle, the ripple, the scents and the sounds, and the sunlight, he trailed a paw in the water and dreamed long waking dreams. The Water Rat, like the good little fellow he was, sculled steadily on and forebore to disturb him.

"So—this—is—a—River!" said the Mole.

"The River," corrected the Rat.

"And you really live by the river? What a jolly life!"

"By and with it and on it and in it," said the Rat. "It's brother and sister to me, and aunts, and company, and food and drink, and (naturally)

washing. It's my work, and I don't want any other. What it hasn't got is not worth having, and what it doesn't know is not worth knowing. Whether in winter or summer, spring or autumn, it's always got its fun and its excitement. When the floods are on in February, and my cellars and basement are brimming with drink that's no good to me, and the brown water runs by my best bedroom window; or again when it all drops away and shows patches of mud that smells like plum-cake, and the rushes and weeds clog the channels, and I can potter about dry shod over most of the bed of it and find fresh food to eat, and things careless people have dropped out of boats!"

"But isn't it a bit dull at times?" the Mole ventured to ask. "Just you and the river, and no one else to pass a word with?"

"No one else to—well, I mustn't be hard on you," said the Rat with forbearance. "You're new to it, and of course you don't know. The bank is so crowded nowadays that many people are moving away altogether: O no, it isn't what it used to be, at all. Otters, kingfishers, dabchicks, moorhens, all of them about all day long and always wanting you to *do* something—as if a fellow had no business of his own to attend to! Now then!" cried the Rat suddenly, "Here's our backwater at last, where we're going to lunch."

The Rat brought the boat alongside the bank, made her fast, helped the still awkward Mole safely ashore, and swung out the luncheon-basket. The Mole begged as a favour to be allowed to unpack it all by himself; and the Rat was very pleased to indulge him, and to sprawl at full length on the grass and rest, while his excited friend shook out the tablecloth, and spread it, took out all the mysterious packets one by one and arranged their contents in due order, still gasping, "O my! O my!" at each fresh revelation. When all was ready, the Rat said, "Now, pitch in, old fellow!"

"What are you looking at?" said the Rat presently, when the edge of their hunger was somewhat dulled, and the Mole's eyes were able to wander off the tablecloth a little.

"I am looking," said the Mole, "At a streak of bubbles that I see travelling along the surface of the water. That is a thing that strikes me as funny."

"Bubbles? Oho!" said the Rat, and chirruped cheerily in an inviting sort of way.

A broad glistening muzzle showed itself above the edge of the bank, and the Otter hauled himself out and shook the water from his coat.

"Greedy beggars!" he observed, making for the provender. "Why didn't you invite me Ratty?"

"This is an impromptu affair," explained the Rat. "By the way—my friend Mr. Mole."

"Proud, I'm sure," said the Otter, and the two animals were friends forthwith.

"Such a rumpus everywhere!" continued the Otter. "All the world seems out on the river today—I came up this backwater to try and get a moment's peace, and then stumble upon you fellows!—At least—I beg pardon—I don't exactly mean that, you know."

"Well," said the Rat, "tell us, *who's* out on the river?"

"Toad's out, for one," replied the Otter. "In his brand-new boat; new togs, new everything! Did I ever tell you that good story about Toad and the lock-keeper? It happened this way. "Toad . . ."

An errant May-fly swerved unsteadily athwart the current in the intoxicated fashion affected by young bloods of May-flies seeing life. A swirl of water and a "cloop!" and the May-fly was visible no more.

Neither was the Otter.

Turn to next page

The Mole looked down. The voice was still in his ears, but the turf whereon he had sprawled was clearly vacant. Not an Otter to be seen, as far as the distant horizon.

But again there was a streak of bubbles on the surface of the river.

The Rat hummed a tune, and the Mole recollected that animal-etiquette forbade any sort of comment on the sudden disappearance of one's friends at any moment, for any reason or no reason whatever.

"Well, well," said the Rat. 'I suppose we ought to be moving. I wonder which of us had better pack the luncheon-basket?" He did not speak as if he were frightfully eager for the treat.

"O, please let me," said the Mole. So, of course, the Rat let him.

The afternoon sun was getting low when the job was finally finished and the two friends started off for home. The Rat sculled gently in a dreamy mood, murmuring poetry-things over to himself, and not paying much attention to Mole. But the Mole was very full of lunch, and self-satisfaction, and pride, and already quite at home in a boat (so he thought) and was getting a bit restless besides: and presently he said, "Ratty! Please, *I* want to row, now!"

The Rat shook his head with a smile. "Not yet, my young friend," he said—"wait till you've had a few lessons. It's not so easy as it looks."

The Mole was quiet for a minute or two. But he began to feel more and more jealous of Rat, sculling so strongly and so easily along, and his pride began to whisper that he could do it every bit as well. He jumped up and seized the sculls so suddenly that the Rat, who was gazing out over the water and saying more poetry-things to himself, was taken by surprise and fell backwards off his seat with his legs in the air for the second time, while the triumphant Mole took his place and grabbed the sculls with entire confidence.

"Stop it, you *silly* ass!" cried the Rat, from the bottom of the boat. "You can't do it! You'll have us over!"

The Mole flung his sculls back with a flourish, and made a great dig at the water. He missed the surface altogether, his legs flew up above his head, and he found himself lying on the top of the prostrate Rat. Greatly alarmed, he made a grab at the side of the boat, and the next moment—Sploosh!

Over went the boat, and he found himself struggling in the river.

The Rat got hold of a scull and shoved it under the Mole's arm; then he did the same by the other side of him and, swimming behind, propelled the helpless animal to shore, hauled him out, and set him down on the bank, a squashy, pulpy lump of misery.

When the Rat had rubbed him down a bit, and wrung some of the wet out of him, he said, "Now, then, old fellow! Trot up and down the towing-path as hard as you can, till you're warm and dry again, while I dive for the luncheon-basket."

So the dismal Mole, wet without and ashamed within, trotted about till he was fairly dry, while the Rat plunged into the water again, recovered the boat, righted her and made her fast, fetched his floating property to shore by degrees, and finally dived successfully for the luncheon-basket and struggled to land with it.

When all was ready for a start once more, the Mole, limp and dejected, took his seat in the stern of the boat; and as they set off, he said in a low voice, broken with emotion, "Ratty, my generous friend! I am very sorry indeed for my foolish and ungrateful conduct. My heart quite fails me when I think how I might have lost that beautiful luncheon-basket. Indeed, I have been a complete ass, and I know it. Will you overlook it this once and forgive me, and let things go on as before?"

"That's all right," responded the Rat cheerily. "What's a little wet to a Water Rat? I'm more in the water than out of it most days. Don't you think any more about it; and, look here! I really think you had better come and stop with me for a little time. I'll teach you to row, and to swim, and you'll soon be as handy on the water as any of us."

The Mole was so touched by his kind manner of speaking that he could find no voice to answer him; and he had to brush away a tear or two with the back of his paw. But the Rat kindly looked in another direction, and presently the Mole's spirits revived again.

When they got home, the Rat made a bright fire in the parlour, and planted the Mole in an arm-chair in front of it, having fetched down a dressing-gown and slippers for him, and told him river stories till supper-time.

Supper was a most cheerful meal; but very shortly afterwards a terribly sleepy Mole had to be escorted upstairs by his considerate host, to the best bedroom, where he soon laid his head on his pillow in great peace and contentment, knowing that his new-found friend the River was lapping the sill of his window.

This day was only the first of many similar ones for the emancipated Mole, each of them longer and full of interest as the ripening summer moved onward. He learnt to swim and to row, and entered into the joy of running water; and with his ear to the reed-stems he caught, at intervals, something of what the wind sent whispering so constantly among them.

THE WORLD IN STAMPS

By Ernest A. Kehr

THE recent events in central Europe involving Germany's seizure of Austria and the Polish-Lithuanian trouble, have caused stamp collectors to review the development of these countries as revealed on postage stamps.

Austrian stamps since 1850 tell the story of the rise and fall of a great empire. Upon these stamps are depicted the palaces and governmental buildings of the Hapsburg monarch, Franz Josef, who ruled Austria and Hungary at that time. The monarchist sets use the crown, double eagle and similar symbols of empire. The portrait of Emperor Franz Josef appears frequently as the central design of the empire stamps.

Pilsudski

Between 1914 and 1918, the period of the World War, Austria's stamps were decorated with pictures of soldiers, battleships, cannon, cavalry brigades and even airplanes.

After the war we can see the effects of defeat. Hungary was made a separate nation with King Karl and Empress Zita as monarchs. Austria was set up as a republic under the name of *Deutschoesterreich* (German-Austria). All stamps were overprinted with that single word that seemed to foretell the event that was to come twenty years later, on March 12, 1938, when Hitler invaded Austria and really made it *Deutschoesterreich*.

Assassinated

One of Austria's last stamps (see cut) honored her slain Chancellor, Dolfuss, whom the Nazis murdered in their unsuccessful effort to capture the government in 1934.

The Polish-Lithuanian crisis may likewise be traced through the postage stamp album. Lithuania is regarded as a post-war nation, but stamp collectors are frequently reminded that Lithuania long ago was a powerful country whose boundaries extended from the Baltic Sea to the Black Sea.

Her influence waned and in 1569 she was so weak that she and Poland had to unite and defend themselves against Russian invasion. Even this merger was unsuccessful and both countries were absorbed by the land of the Czar.

In 1918, while Russia was having her revolution, Lithuania declared her independence. She immediately started issuing her own stamps.

Poland's postal history closely resembles that of the smaller country, because she was made independent only after Russia had been vanquished. Polish stamps show farmers and famous heroes like Pulaski, Kosciusko, Pilsudski, and Paderewski (the great pianist who was also a statesman). He has played in America many times.

JOBS WITH SPINDLES & NEEDLES

How A Machine Started A Revolution

THERE is a three-word expression which you will hear on and off the rest of your life, and right now is a good time to fix it in your mind so that you will always recognize it when you see it and hear it. The expression is "the industrial revolution."

Here, in this "making clothes" issue of Junior Scholastic, is a good place to talk about it, because the industrial revolution started when new and fast weaving and spinning machines were invented.

An invention by an Englishman named John Kay, back in 1733, was the first important event in the industrial revolution.

Before we tell you the interesting story of John Kay, we want to say just a few more words about the meaning of the industrial revolution. Perhaps when you first see the word *revolution* you think of a war like our American Revolutionary War.

A Gradual Change

The industrial revolution was no war. It was a gradual change all over the world in industrial countries where people began inventing and using machines to increase the amount of work they could do.

Another expression, meaning almost the same thing as the industrial revolution, is "the machine age."

It is called a "revolution," because the invention of new machines and the discovery of steam and electricity, brought a change over the way people worked and lived. Factories and mills became more and more numerous.

The industrial revolution started in England first. That country developed the inventors who made the first machines which caused this change in the lives of the people.

Now let's have that story of John Kay, so that we can better understand how this revolution got going.

In 1733 John Kay invented the flying shuttle which doubled the speed of weaving cloth. Up to that time weaving was slow because the crosswise threads (the *weft*—see page 4) had to be carried from one side of the *warp* to the other by hand. The flying shuttle did it mechanically.

When John Kay's flying shuttle began attracting attention, the weavers of his town, fearing that the invention would put them out of work, deserted their looms and attacked Kay's house. They destroyed everything in his house, and Kay had to flee to France. They destroyed Kay's loom with flying shuttle, but he had already patented it.

From that day to this, workmen have feared the coming of new machines, lest they should be thrown out of work. The weavers in Kay's town did not realize that the flying shuttle, and other improvements in weaving and spinning, would cause a big demand for thousands of new workers.

Factories were built, steam power came, cotton from America rolled "down the river for Liverpool and Leeds."

But the workers who were put out of work by these changes were not immediately re-employed, because the changes took time—sometimes many years. So there were always periods of unemployment for hundreds of thousands of workers.

The industrial revolution brought machines to do more work, causing lower prices. In this way, many of the comforts and conveniences of life could be bought by all people who had jobs. This was its bright and good side. Its sad and seamy side was the cruelty of the factory system it set up.

Men, women and children labored at the machines 14 to 16 hours a day, in factories that were dirty and dingy. Tuberculosis was common among the workers. Accidents were frequent, caused by the unprotected machines. Pay was poor.

Scene from a song and dance number in the musical comedy "Pins and Needles" which is one of the season's smash hits on Broadway. It is produced and performed by workers whose regular work is the making of clothes. The backdrop shows symbols of their jobs—scissors, tape, sewing machine, dummy.

In self-defense, the mill workers began organizing. In the cotton and woolen mills they formed unions, and succeeded gradually in getting better pay and working conditions. Today their strong national union is called The United Textile Workers of America. They have 400,000 members, but there are a million other workers in the mills that are not members. Most of the unorganized workers are in the South, where many of the cotton mills moved in order to obtain cheaper labor.

After the cloth has been made in these mills, it has to be turned into clothing. This part of the work is what is called the ready-to-wear garment industry. Sometimes it is referred to as the "needle trades." It includes everything that has to be done to the cloth in order to make it into a suit or a dress, or underclothing, etc.

Between 1880 and 1900 the needle trades in the United States grew at a very fast rate. People began buying their clothes ready-made, instead of making their own, or having it done by their local tailors and dressmakers.

"Sweatshop" Days

Garment factories grew up, chiefly in New York City, where there was a large supply of cheap labor, mostly foreigners who had just come over to America. These new Americans were willing to put up with anything. The factories were dark, airless and filthy, and became known as "sweatshops."

Today, these needle trade workers are strongly organized in two big unions—the International Ladies Garment Workers Union, and the Amalgamated Clothing Workers of America (men's garments). They have ended sweatshops and brought the workers better pay.

These unions provide education, recreation, medical services and other services for their members. The ILGWU has a theatre of its own. One of the smash hits now playing on Broadway is a musical comedy called *Pins and Needles*, which the ILGWU workers are acting and singing to packed houses every night. (See picture on this page.)

NO ISSUE NEXT WEEK. Junior Scholastic will skip an issue next week, because of the Easter holiday period. This does not cut down the total number of issues during the semester. Each full-term subscriber will receive 16 issues for the semester. The next issue will be dated April 23, and will be delivered in the schools April 18 or 19.

HEADLINE NEWS

Wages in the South Too Low, Says President

President Roosevelt is enjoying a brief vacation at Warm Springs, Georgia.

On his way to Warm Springs from Washington, the President made a speech in Gainesville, Georgia, in connection with the dedication of the new Roosevelt Square there. This square was named for the President to honor him for his part in helping to rebuild Gainesville after a tornado struck the town in 1936.

The President congratulated the citizens of Gainesville on the way they had worked together unselfishly to rebuild their city. The President added that the whole nation could learn something from Gainesville's experience.

"Today national progress and national prosperity are being held back chiefly because of selfishness on the part of a few," said the President.

These few selfish people, he explained, give no thought to the welfare of the one-third of our population which is ill-fed, ill-clothed and ill-housed. He called these selfish people "believers in feudalism." The President had in mind particularly the people who have opposed legislation to increase wages and decrease hours.

The President said that wages in the South were especially low, and that something must be done to make them higher.

Opponents of the New Deal criticized the President for his speech. They said that he was trying to shift the blame for our country's troubles on "a selfish few" while really his own Administration was to blame.

New Machine for Planting Cables in Ocean Bottom

A new way of planting cables in the bottom of the ocean was put into use last week.

The instrument used to do this work is a special type of plow, controlled from shipboard by a long nickel-steel chain. The plow cuts a furrow in the ocean bottom, feeds the cable into the furrow and closes over the furrow behind it—all in one operation.

A cable ship, the *Lord Kelvin*, set out of New York City recently, loaded with the plow, a 4,200-foot nickel-steel chain and a supply of deep sea cable. The ship was headed for the coast of Ireland, where it will begin planting the cable.

The old way of laying cable was to let it lie on the bed of the ocean, exposed to whatever came along. A great deal of damage was done to cables every year by the heavy drags which fishermen use on their nets. The drags would catch on the cables and tear them.

Banks in New York State Will Sell Life Insurance

The State of New York will allow people to buy life insurance in savings banks. This law was passed so that people with low incomes will be able to afford life insurance.

Up to now people had to buy life insurance from private companies, which charged rates too high for some of the poorer people.

What is life insurance, and why do people want it?

In our daily lives, we are always surrounded by danger. The father of a family may die suddenly and leave his widow and children penniless. To make sure that his family will have some money after he dies, a man can buy life insurance. He pays a certain sum of money each year to the insurance company. In return the company promises to pay his family a certain agreed sum in case he dies.

If a man wants his family to get $1,000 when he dies, he takes a $1,000 life insurance policy. The amount he has to pay each year depends on how old he is when he begins his payments. If he begins when he is 30 years old, he has to pay $24 a year. If he begins when he is less than 30 years old, he pays proportionately less. If he begins when he is more than 30 years old, he pays proportionately more.

Part of the money that is paid to insurance companies goes to pay for the work of the salesmen who sell insurance. Insurance sold by savings banks will not cost so much money, because savings banks will not employ men especially to sell insurance. People who want insurance from savings banks will have to go to the bank and ask for it themselves.

New York is the second state to pass a law allowing people to buy life insurance from savings banks. Massachusetts passed such a law in 1907.

Savings bank life insurance is meant for people who cannot afford regular insurance. Not more than $3,000 worth will be sold to any one person. People who want more will have to buy it from private companies, as before.

Colonel House Dies; President Wilson's Adviser

Colonel Edward M. House died last week at his home in New York City, at the age of 79.

Colonel House was one of the most influential men in our country during the presidency of Woodrow Wilson (1912-1920). President Wilson had great confidence in Colonel House, and appointed him to talk with European statesmen about the problems of war.

Colonel House was often called "the man of mystery," because of his tremendous influence over President Wilson and the government at a time when our country was being drawn into the World War.

Though Colonel House had all this great influence, he held no public office. He was a private citizen, and desired to remain as such. He enjoyed being "behind the scenes."

The thing which President Wilson and European statesmen admired in Colonel House was his ability to think clearly, and make good decisions.

Texas was Colonel House's native state, and it was there that he received the rank of colonel. He was born in Houston in 1858.

Here is the President at Gainesville, Georgia, in one of the two new, specially designed Cadillacs which were used for the first time on this occasion. The new cars have a 148-inch wheelbase, with reinforced running boards and low doors to accommodate Secret Service operatives. Note special hand grips on the windshield for the Secret Service men. Also note the U. S. Secret Service plate on bumper. These cars move smoothly at 2 miles per hour, and jump quickly to 95.

Should the Philippines Have Their Independence?

For many years the Philippine Islands have belonged to the United States—ever since 1899, when Admiral Dewey won the Battle of Manila Bay against Spain.

Most of the people of the Philippines wanted to be independent. But here in America, government leaders thought that the Filipinos were not yet ready to govern themselves. Finally, four years ago, Congress passed a law which would give the Philippines full independence in 1946. Meanwhile the Filipinos were to elect their own president and legislature. A high commissioner from the United States would stay in the Philippines to see that all went well, and after 1946 a U. S. commissioner would no longer be stationed there.

Last year Manuel Quezon, first President of the Philippine Commonwealth, paid a visit to Washington. He came to ask that the date for his country's freedom be made 1939 instead of 1946.

A short time later, President Quezon and the Philippine government had a change of heart. They saw how Japan was on the warpath. How long would the Filipinos remain free under these conditions?

Now President Quezon would like to hold a plebiscite (a vote of his people) to see whether they want to be independent or whether they still want America's protection. Paul V. McNutt, United States High Commissioner to the Philippines, thinks that the Philippines should remain part of the United States.

Some Congressmen in Washington think that we ought to grant the Philippines their independence, and do it soon. They say that we would have to build a much larger navy than we have now if we intend to protect the Philippines. They say it isn't worth so much money, and the risk of so many lives, to go to war over these islands.

Commissioner McNutt and others who agree with him say that if we've had the Philippines so long, we shouldn't let them down now, when they are in danger of being taken by a nation on the war-path—Japan.

Food, Drug Advertising Must Tell The Truth

Pinkerton's Pills Cure Colds.

Spongo Soap Will Clear Your Face of Pimples and Give You a Clear Complexion.

Above are just two of the hundreds of advertising statements which lead people to buy products that cannot do what the advertising claims.

This kind of advertising is called misleading. Congress has just passed a new law against it. Hereafter, advertising of food, drugs and cosmetics must contain no misleading or untruthful statements.

The new law applies only to drugs, foods and cosmetics. But it is an important law for all consumers, because the health of the people depends on safe and reliable drugs and food. And, in the past, thousands of people have done serious injury to their lips, mouth and eyes, from cosmetics which contained injurious ingredients.

Now consumers are given better protection, and any company that violates the new law can be fined as much as $5,000.

The law gives the Federal Trade Commission power to enforce it. Some people think that it would have been better to give this power to the Pure Food and Drug Administration of the Department of Agriculture. These people say that the Federal Trade Commission will not be so determined to enforce the law as the Pure Food and Drug Administration would be.

There was a big argument in Congress over this. The congressmen favoring the Federal Trade Commission won out.

THE WARS

Spain

Is the war in Spain coming to an end? The Loyalist (Government) side has its back to the wall, and has suffered defeat after defeat in recent weeks. General Franco's Insurgent army is less than 100 miles from Barcelona, capital city of Loyalist Spain.

The war has been going on for 20 months, and has caused a great deal of uneasiness among other European countries. Some of these countries have helped one side or the other in Spain.

Germany and Italy have given a great amount of help to General Franco's side. Dictators Hitler and Mussolini of Germany and Italy are very eager to have General Franco win, because he would be a help to them in case he became Spain's dictator.

Russia has sent airplanes and other materials, and some officers, to help out the Loyalist side. Because Russia is so far away, they have not been able to help the Loyalists as much as Germany and Italy have helped the Insurgents.

Help for the Loyalists has come from other countries, but it has not come from the official governments of the countries. For instance, there are quite a few Americans fighting on the Loyalist side. But our government did not send them.

France's government, under Premier Leon Blum, is showing a desire to send troops to help the Loyalists. Mussolini, Italy's dictator, warned France that French troops must stay out of Spain. He said if France sent troops, a European war might be the result.

China

Both Chinese and Japanese forces report victories in different sections of China. About 30,000 soldiers were killed on both sides during one week's fighting. The Japanese have been driving toward Hankow, present capital of China, but last week they were forced to evacuate some of the towns they had captured. Chinese people were jubilant over these victories. Will the Chinese be able to keep it up?

REORGANIZATION

The Senate passed the Reorganization Bill last week. This bill is one of the most important parts of President Roosevelt's New Deal program.

The Reorganization Bill gives the President power to eliminate or reorganize various departments in the executive branch of the government. Congress has power to veto any of these changes within 60 days.

The Bill now has to be considered by the House of Representatives. If it is passed by the House, the bill will probably be sent to a joint committee of the House and Senate to be put in final form.

There are many people opposed to this bill. They say it gives the President power not granted by the Constitution.

BELLS—885 OF THEM

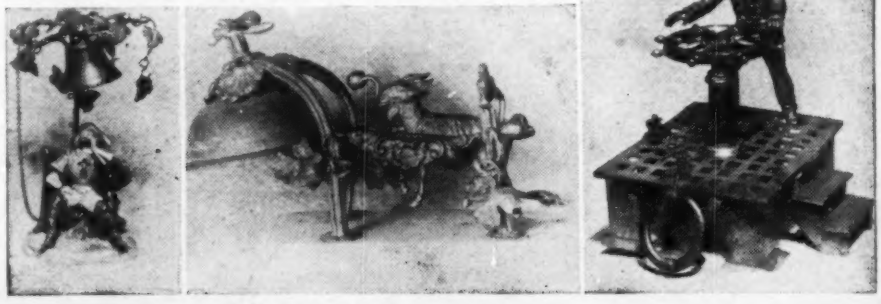
Cowbells, school bells, dinner bells, door bells, temple bells, sleigh bells! These are only a few of the different kinds of bells that are on exhibition this week in New York City.

Altogether there are 885 of them—all collected by one man, Nathaniel Spear, Jr. His hobby is bell-collecting!

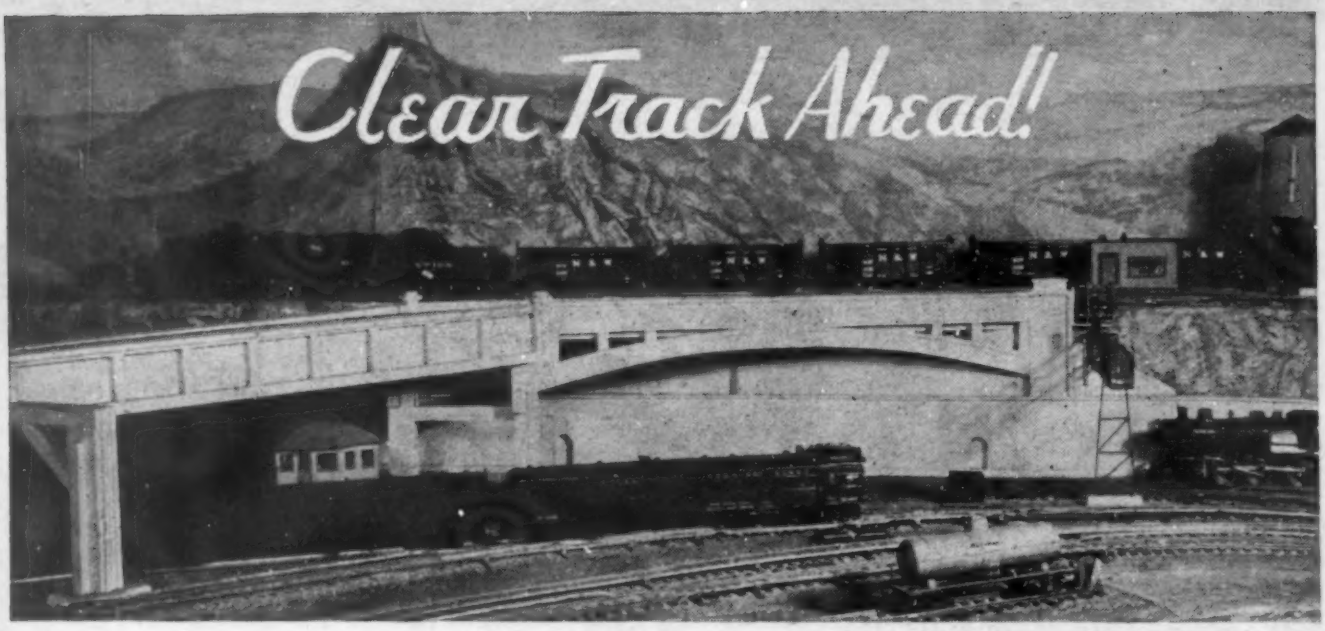
The collection includes bells of silver, gold, bronze, pewter, iron, glass, porcelain, wood and even one of the antler of a deer. The smallest is one-third of an inch in diameter. The largest is eighteen inches high.

The oldest bells go back to early Roman Empire days. There are bells from many different countries—France, Italy, Russia, Peru, China, Belgium, Austria, Poland, India, England and Cuba, among others.

These three bells from the Spear collection give you an idea of the different designs of the bells. These three are from Austria. The goat is over 300 years old.



Clear Track Ahead!



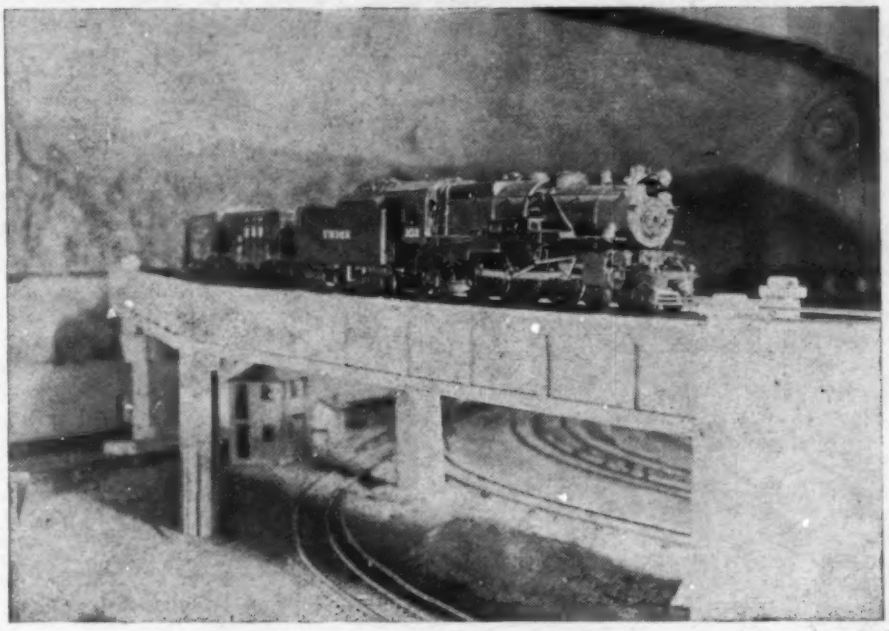
THE pictures on these two pages and on the front cover of this issue were taken along the Union Connecting R. R. Nobody's ever ridden on this railroad, and nobody ever will.

The Union Connecting R. R., in these pictures, might be any railroad, anywhere in the United States. But it's really a very special kind of railroad. It's a scale model railroad, built by members of the New York Society of Model Engineers.

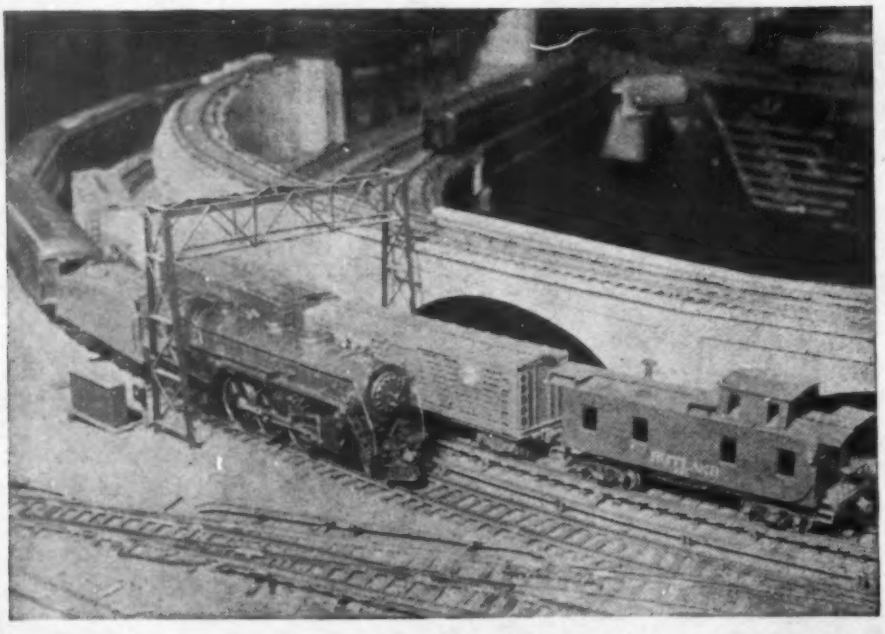
These pictures were taken at the tenth annual exhibition of the society, held in New York recently. The exhibition ran for two weeks, and 20,000 people came to see it. Admission was 25 cents.

The Union Connecting R. R. is not a toy. Model engineers would be very much insulted if you called their models toys.

The difference between a toy and a model is one of accuracy. In a toy train little attention is paid to details. But a model is a small but exact copy of a particular train.



Photos by Owen Reed



At top of page

At the top of this page we see a freight train crossing a concrete bridge, while a gas-electric engine pulls a passenger train under the bridge. All the bridges, viaducts and trestles are built to scale. And the mountain in the background is made of chicken wire, covered with plaster of paris, and painted.

Picture above

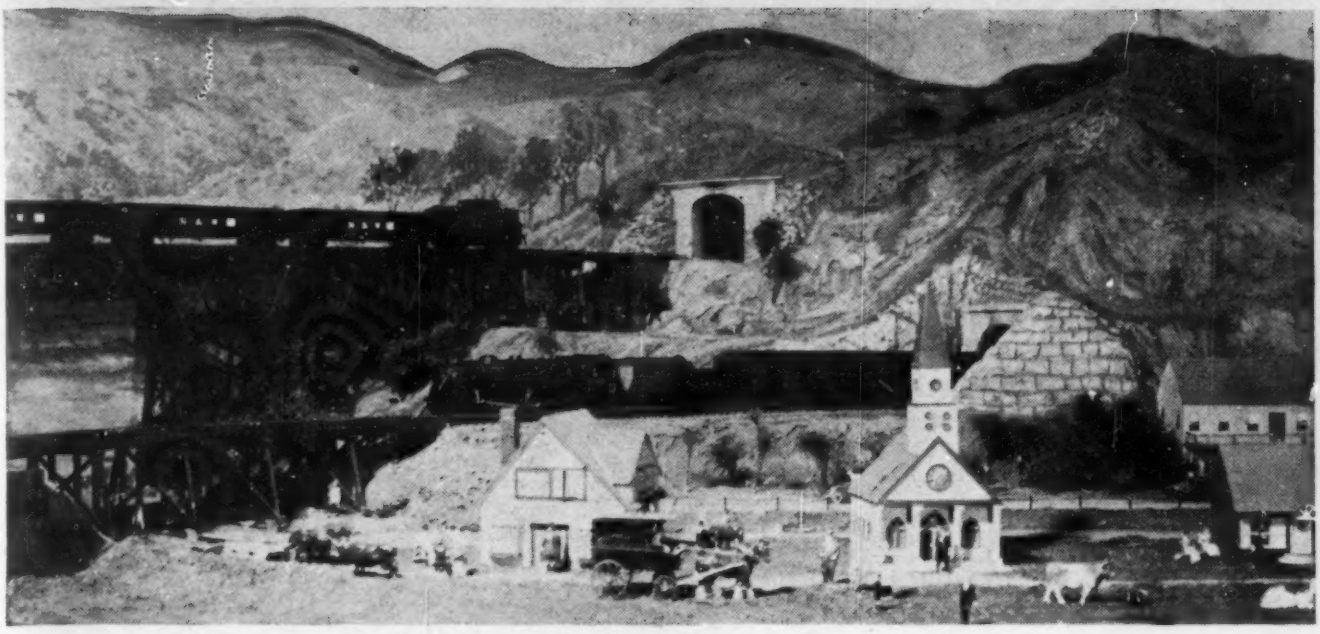
In the picture directly above is another view of the same bridge with a coal train comin' round the mountain.

Picture at left

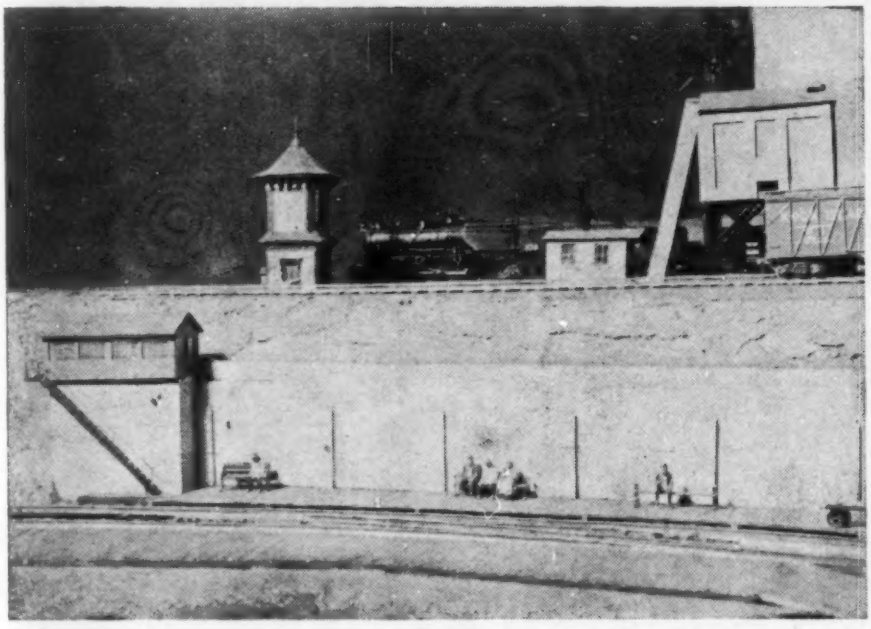
At the left we see a passenger train and a freight train passing each other under a signal bridge. Every detail has been attended to. The caboose of the freight train even has small red warning lights at the side.

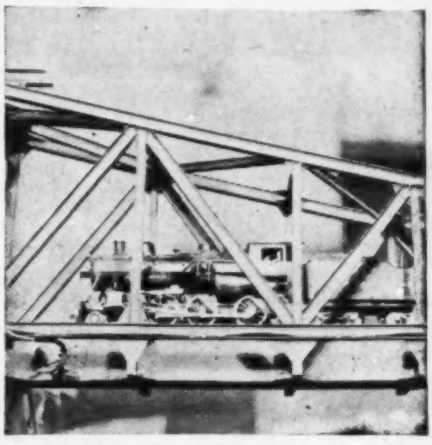
Front cover

The picture on the front cover shows the railroad's main engine yard.



ABOVE: This peaceful village is Churchville. Trains move over the trestle and into the tunnel at 5 m.p.h.





The Churchville Express roars across the rolling drawbridge on the last stretch of its long journey. Note the engineer at the window of his cab.

Picture above

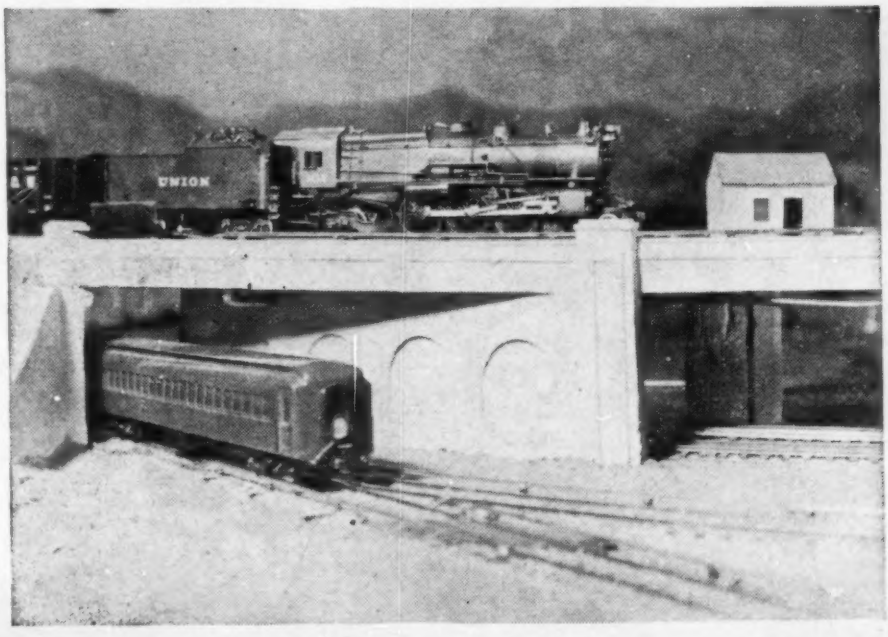
Here's the Churchville way station, with tiny figures sitting on the benches. At the left of the picture is a waiting room. The pointed tower on the top level is an abandoned signal tower that has been completely boarded up. At the right is a coal wharf.

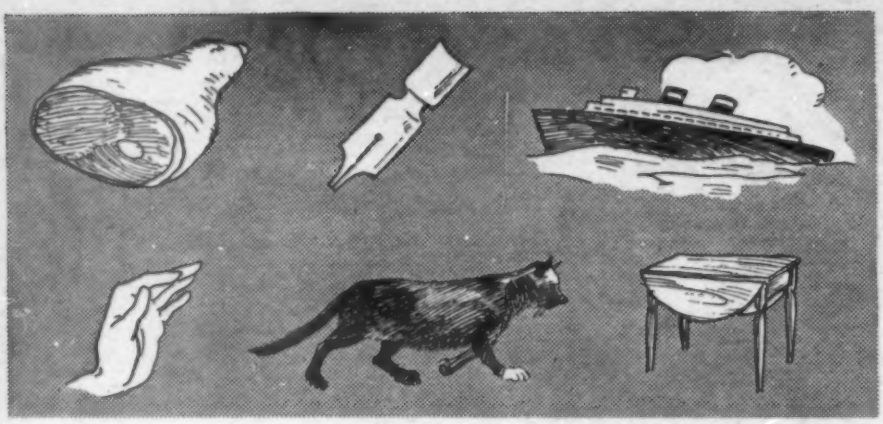
Picture at right

In the picture at the right we see a passenger train disappearing from view under an overpass, and a coal train coming across the top.

Two electric generators supply the power for the Union Connecting R. R. Electricity is supplied to the trains by the third rail.

A special feature of the Union Connecting R. R. is its interlocking system of switches. Most railroad control boards have a separate lever for each switch along the track. By using the interlocking system, all switches along any desired route can be automatically set the right way.





MATCH YOUR WITS

Edited by EUGENE SHEFFER

WE'LL give you ten minutes to do this puzzle. See the six objects picture dabove. Each represents the first syllable or the first part of a combined word, such as *tablespoon*. The second part of each word is given in the list at top—right. All you have to do is to fill in the first part, using the above pictures as your cues. There are 28 altogether. We have already tipped you off to one (tablespoon). You ought to get 20 of them in five minutes or less. The remaining eight may slow you down a little. The final three may cause you such a brainstorm that you will go over the limit.

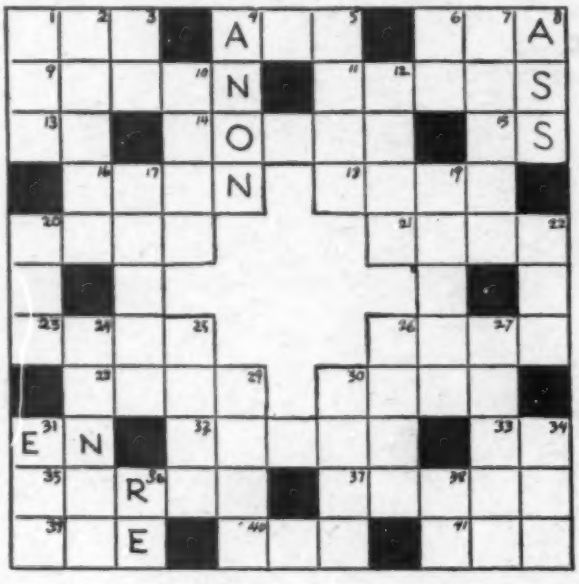
Easy Word Building

(See instructions under pictures)

.....*shape*	.....*name*
.....*nip*	.....*d'hote*
.....*knife*	.....*per*
.....*land*	.....*spring*
.....*let*	.....*builder*
.....*saw*	.....*fish*
.....*wreck*	.....*cloth*
.....*boat*	.....*mock*
.....*holder*	.....*ball*
.....*spoon*	.....*mate*
.....*string*	.....*gut*
.....*bill*	.....*cuff*
.....*board*	.....*load*
.....*call*	.....*book*

KOLLEGE-KUT KROSSWORD

HERE is a crossword puzzle with its cues in story form. The story starts below with the words "The housewife in her——(9A) . . ." The blank space with the 9A in parenthesis, indicates a missing word, which must be fitted into the puzzle in space 9, reading across from left to right. A equals ACROSS, and D equals DOWN. Four words are already filled in—31A is EN, a printer's measure; 36D is RE, a note of the musical scale; 8D is ASS, a beast of burden; and 4D is ANON, which means *soon*.



THE housewife in her ----- (9A), preparing food to ----- (31D), such as lamb ----- (21A), the golfer about to ----- (39A) off, the debutante going to hear the ----- (2D) "Faust," the bride at whom we have just thrown ----- (26A)—all these people ----- (29D) different kinds of clothes. In the ----- (6A) a great industry has grown up to supply these people, but ----- (25D) clothes should ----- (13A) manufactured. We all ----- (35A) that many people ----- (4A) not sufficiently clothed because they do not have the ----- (14A) to buy clothes. Will the time ----- (5D) come when all of ----- (6D) have enough clothes?

Much clothing today does not "wear like ----- (28A)," and fashions change so often that before a garment is worn out it must be carried up into the ------ (19D) and stored.

Some people regard the purchase of a garment as a kind of ----- (26D). Others seem to wear clothes merely so that people will ----- (7D) at them and admire ----- (23A). They want all ---- (12D) to be upon them. A woman may ------ (20A) before the window of a milliner's and exclaim: "What a beautiful ----- (30D) green hat! I ----- (38D) going right in to buy it!" "Yes," her friend answers, "it is ----- (30A), but remember what happened to the last ----- (20D) you bought here when you were caught in the ----- (16A)!" But ----- (41A), ----- (1A) can often be just ----- (15A) vain about their clothes. They used to wear fancy ----- (11A) under their coats, and don't they search until ----- (33A) last they find a shirt with exactly the kind of ----- (1D) collar they like?

After signing a ----- (37A) and opening his business, the retailer has great expenses to meet. Sometimes he must work into the ----- (22D) small hours of the night. If a suit does not fit properly, he must take it to the ----- (18A) of the shop, where his tailor will ----- (17D) it. His success will ----- (24D) on whether he can make enough profit to make both ends meet. If many customers do not ----- (32A) payment when their bills come ----- (40A), ----- (3D) if many people ----- (27D) buying clothes, nine chances out of ----- (34D) he will have to close up shop. So do not ----- (10D) to pay your bills!

LAST WEEK'S ANSWERS

WORD BUILDING has the following foundation: CONTEST, CONTENT, CONCUR, CONVERSE, CONSIGN.

WAY DOWN SOUTH in the land of DIXIE (third column, reading down)—

I N D I A
M O I S T
T E X A S
P R I C E
C H E A P

FIND THE NICKNAME of South Carolina. It is PALMETTO.